R. E. HESS.

CLAMP.

APPLICATION FILED MAY 18, 1910.

996,244. Patented June 27, 1911.

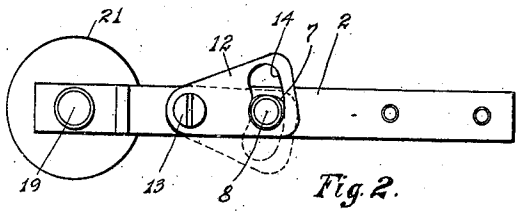

Fig. 2.

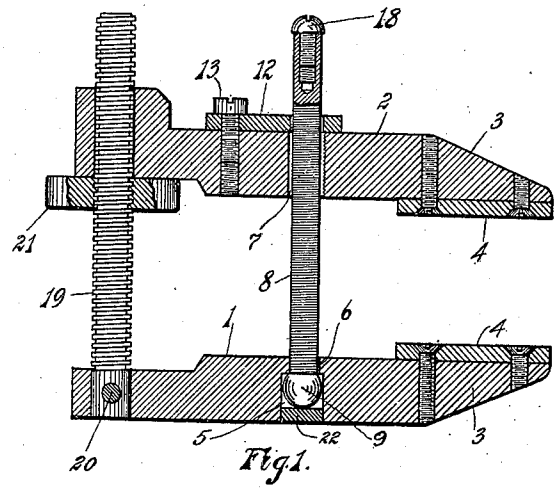

Fig. 1.

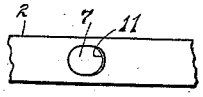

Fig. 5.

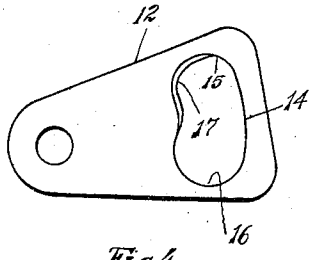

Fig. 4.

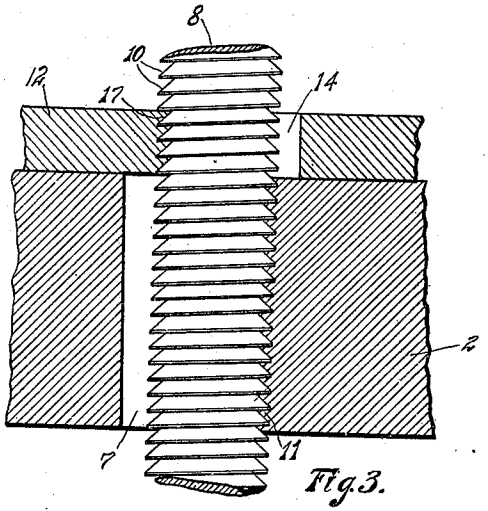

Fig. 3.

WITNESSES:

Chas. E. Hess.

Chas. Finette

INVENTOR

RICHARD E. HESS.

BY W. W. Withenbury

ATTORNEY

UNITED STATES PATENT OFFICE.

RICHARD E. HESS, OF AURORA, ILLINOIS, ASSIGNOR OF ONE-HALF TO AUGUST W. PETERSOHN, JR., OF AURORA, ILLINOIS.

CLAMP.

996,244. Specification of Letters Patent. Patented June 27, 1911.

Application filed May 18, 1910. Serial No. 561,947.

To all whom it may concern:

Be it known that I, RICHARD E. HESS, a citizen of the United States, and residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Clamps, of which the following is a complete specification.

The main objects of this invention are to provide a work clamp especially adapted for use by machinists, tool makers, pattern makers, wood workers, etc., which clamp is capable of quick and easy adjustment; to provide a clamp having improved mechanism for locking the jaws in adjusted position; and to provide a cheap and simple construction which is adapted to hold the work in a positive grip.

A specific construction embodying the invention is illustrated in the accompanying drawings, in which:

Figure 1 is a central vertical section of a clamp embodied in this invention. Fig. 2 is a top plan view of the clamp with the retaining screw removed. Fig. 3 is an enlarged fragmentary section of the movable jaw and the locking mechanism, and showing the latter in locking position. Fig. 4 is an enlarged plan view of the locking lever. Fig. 5 is a fragmentary view of one of the jaws.

In the construction shown, 1 and 2 are the clamping arms or jaws, which may be of any desired form and material, and the jaw 2 is adjustable to and from the jaw 1 at the point of connection or fulcrum. The gripping ends 3 of the jaws are each provided on their inner face with a wear plate 4 which is adapted to protect the jaw.

The jaw 1 is provided in its outer face, and at a point intermediate its ends with a socket or recess 5, from which an aperture 6 extends through the inner face of the jaw. The jaw 2 is provided with an aperture 7, which is in axial alinement with the aperture 6 in the jaw 1, and is slightly elongated or oblong longitudinally of the jaw. The locking bolt 8 extends through the apertures 6 and 7 and is provided with a spherical head 9 which seats in the socket 5. The bolt 8 is of slightly less diameter than the aperture 6 to give the bolt a slight swivel movement in said aperture, and it is provided with threads or corrugations 10 which are relatively deep and are square on their faces adjacent to the head 9, and are beveled on their opposite faces, as shown more clearly in Fig. 3.

The aperture 7 is provided in its side adjacent to the end 3 of the jaw with threads or corrugations 11 which are formed complementally with the threads or corrugations 10, and which are adapted to engage in the latter when the bolt 8 is forced to that side of the aperture 7. A locking lever 12 is pivoted on the outer face of the jaw 2 by means of a pivot pin or screw 13, and is provided with a transverse slot 14 through which the bolt 8 projects. The end 15 of the slot 14 is slightly narrower and a greater distance from the pivotal point of the lever than is the end 16, and on its rear side, or that nearest the pivoted end of the lever, it is provided with screw threads or corrugations 17 which are adapted to engage or mesh in the threads or corrugations 10 of the bolt 8 when the lever is turned so that the bolt 8 is in the end 15 of the slot. When the lever is turned in the opposite direction the end 16 of the slot withdraws the corrugations 10 from the corrugations 11. A screw 18 is tapped into the end of the bolt 8 which protrudes from the jaw 2 and the head of the screw is of larger diameter than the bolt and retains the jaw 2 on the bolt.

A clamping bolt 19 is secured in an aperture in the rear end of the jaw 1 by means of a pin 20, and projects from the face of the jaw. The rear end of said jaw 2 is provided with an aperture through which the clamping bolt freely passes, and a clamping nut 21 is carried on said bolt intermediate the jaws, and is adapted to be forced against the rear end of the jaw 2 to move said end away from the rear end of the jaw 1 and thereby move the gripping ends of the jaws toward each other. Said nut is preferably round and is of comparatively large diameter so as to be easily gripped by the operator without injury to his hand. A plug 22 may be inserted in the socket 5 to hold the locking bolt 8 in position.

The operation of the construction shown is as follows: When the locking lever 12 is turned so that the locking bolt 8 is at the wide, unthreaded end 16 of the slot 14, and the clamping nut 21 is at the limit of its movement toward the jaw 1, the jaw 2 is free to be moved longitudinally of the bolts 8 and 19, either toward or from the jaw 1. When the work is inserted between

the clamping ends 3 of the jaws, the jaw 2 is brought down onto the work and then the locking lever 12 is turned on its pivot 13 until the end 15 of the slot 14 contains the bolt 8. The end 15 of the slot 14 being farther from the pivotal point of the lever than the end 16, acts to force the bolt 8 toward the end 3 of the jaw and the threads or corrugations 10 lock with the threads or corrugations 11, while the threads or corrugations 17 on the lever lock with the threads or corrugations 10, and hold the jaws the desired distance apart at their fulcrum. The nut 21 is then forced against the rear end of the jaw 2, and, since the locking bolt acts as a fulcrum for the jaws, the ends 3 are forced into gripping engagement on the work. When it is desired to release the work the nut 21 is retracted and the lever 12 is turned to release or force the bolt 8 from the corrugations 11.

While I have shown but one specific embodiment of the invention it will be understood that various details of the construction shown may be varied or omitted without departing from the spirit of the invention.

I claim:

1. A clamp, comprising a pair of jaws, one of said jaws having an elongated aperture therein with corrugations at one end, a corrugated locking bolt swiveled on the other jaw and projecting through said aperture, a locking lever pivoted on the apertured jaw and having an elongated slot therethrough adapted to register with said aperture and arranged eccentrically to the pivotal point of the lever, and adapted when moved in one direction to force the corrugations of the bolt into the corrugations of the aperture, and when moved in the opposite direction to force the bolt away from the aperture corrugations, and clamping means on the rear ends of the jaws adapted to force the front ends of the jaws into gripping engagement.

2. A clamp, comprising a pair of jaws one of which is provided with an elongated aperture having corrugations at one end, a corrugated locking bolt swiveled on the other jaw and projecting through said aperture, a locking lever pivoted on the first named jaw and having an eccentric slot therethrough through which said bolt extends, corrugations in one end of said slot adapted to engage the corrugations of the bolt, said slot being so arranged that when the lever is moved in one direction it will force the corrugations of the bolt into the corrugations of the jaw aperture and when the lever is moved in the opposite direction it will retract the bolt corrugations from the aperture corrugations, a bolt pivoted at the rear end of one jaw and extending through an aperture in the other jaw, and a set nut on said bolt between said jaws and adapted to force the rear ends of the jaws apart.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

RICHARD E. HESS.

Witnesses:
CHAS. E. HESS,
OTTO MAY.